

COIN TELEPHONE STATIONS

COIN LEVEL DETECTOR

1. GENERAL

1.01 This section provides information on identification, installation, connections, operation, and maintenance of the coin level detector.

1.02 Information in this section was formerly contained in Section 506-110-104 which is hereby canceled.

2. IDENTIFICATION

2.01 The coin level detector (CLD) is a device which provides a means for local or remote monitoring of the level of coins in the coin box of coin collectors and coin telephone sets with single coil relays.

2.02 The components necessary to incorporate the CLD are furnished in three kits as follows:

(a) One D-180042 kit (Fig. 1) is required to modify each coin collector and each telephone set housing. The kit consists of a P-20F668 terminal board assembly, P-20F879 contact spring assembly with P-206518 hex nut (No. 8-32), a P-20F881 insulation strip, and a P-22F045 terminal board cover.

(b) One D-180110 kit (Fig. 2) is required to modify each coin box. The kit consists of a P-20F874 dual element sensor which clamps to the rear of the coin box.

(c) A 1E coin receptacle cover (Fig. 3) is also required for each coin box. The 1E cover is similar to the 1D (MD) cover except it is equipped with a contact stud.



The 1E cover can be used with or without the CLD modification but the 1D cover cannot, consequently the 1D is rated MD.

3. INSTALLATION

3.01 The following tools are necessary to perform the modification:

- 743A drilling template (Fig. 4)
- 1/4-inch drill*
- Small C-clamp (2- to 3-inch)
- Flat file

*Telephone housings equipped with KS-19277 locks pose an interference problem with the 1/4-inch drill. The shank of the drill can be no greater than 0.175-inch to permit drilling adjacent to the bolt fastener.

Modification of Coin Box

3.02 Replace the 1D coin box cover with the 1E cover (Fig. 5).

3.03 Clip the dual element sensor on the rear of the coin box (Fig. 5).

Modification of Coin Collectors and Coin Telephone Sets

3.04 Install D-180042 kit in 200- and 1200-type coin collectors with single coil relays, and 1A/1C coin telephone sets as follows:

Note: Totalizer and coin chassis must be removed from 1A/1C coin telephone sets. Refer to 3.05(1) for removal.

- (1) Remove the RH screw which secures the right front of the 1B rail to the lower housing.
- (2) Install the 743A template against the right side of the base as shown in Fig. 6 and secure it with the screw removed in (1).

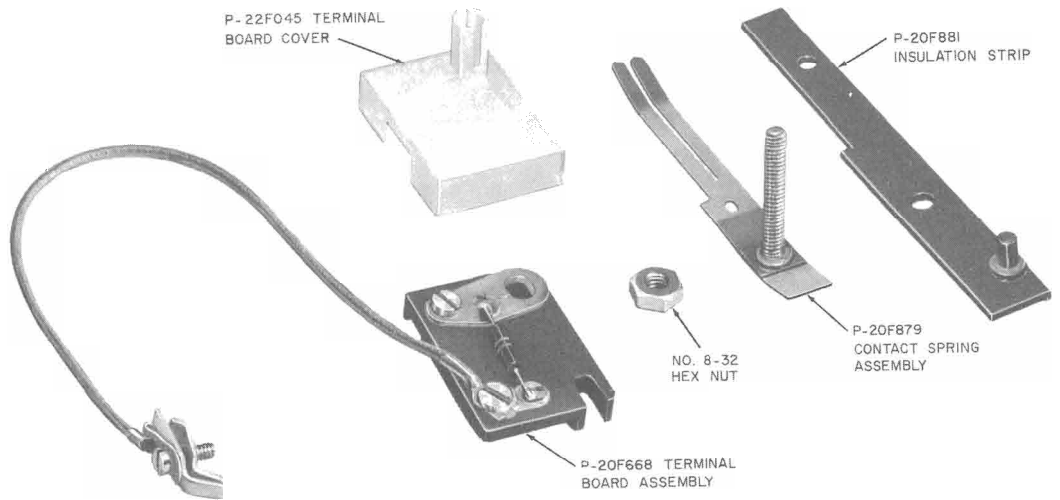


Fig. 1—D-180042 Kit

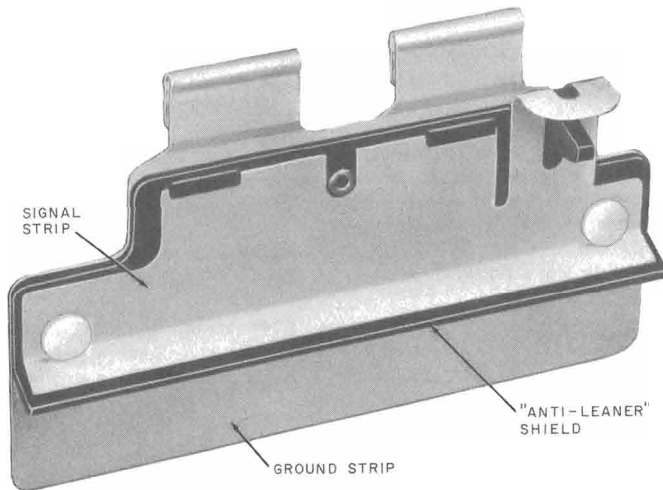


Fig. 2—D-180110 Kit

Note: The positioning tab of the template must be inserted in the coin leveling hole.

- (3) Clamp the 1B rail to the housing during the drilling operation using the C-clamp described in 3.01.



Cover the coin relay, hopper, and return chute with a piece of plastic, cloth, or other suitable material to prevent metal drill shavings from falling into these mechanisms.

- (4) Using the 1/4-inch drill described in 3.01, drill the hole through the housing.
- (5) Remove the screw and drilling template.
- (6) Using the 1/4-inch drill, enlarge the hole where the screw was removed.
- (7) Using a suitable file, remove all burrs from the 1B rail.
- (8) Remove the C-clamp.
- (9) Remove all drill chips from the telephone set.
- (10) Position the insulation strip against the 1B rail with the boss on the strip in the 1/4-inch mounting screw hole (Fig. 7). Hold the contact springs in place with the stud extending through the hole drilled in the base, and fasten the terminal board in place on the housing base with the nut provided (Fig. 8).
- (11) Reinstall totalizer and coin chassis in 1A/1C coin telephone sets [See 3.05(7)].

3.05 Install D-180042 kit in 2A/2C coin telephone sets as follows:

- (1) Remove totalizer assembly and coin chassis as follows:
 - (a) Disconnect P2 from J2 and remove coin chute totalizer assembly.
 - (b) Disconnect (BK) and (Y) leads from coin relay and carefully pull leads through guide hole in hopper.
 - (c) Loosen chassis mounting captive screw.

- (d) Pull chassis out at bottom, slide down, and remove.
- (2) Using the contact spring mounting hole as a guide (Fig. 9) drill through coin rail with 1/4-inch drill.
- (3) Remove the RH screw which secures the right front of the 1B rail to the housing assembly.
- (4) Using the 1/4-inch drill, enlarge the hole where the screw was removed.
- (5) Using a suitable file, remove all burrs from the 1B rail.
- (6) Remove all drill chips from the telephone set.
- (7) Install totalizer assembly and coin chassis as follows:
 - (a) Install coin chassis using reverse of procedure (1).

Note: When installing chassis, dress inside wire behind chassis, allowing for sufficient wire to be connected to TB1 from right side as viewed from front of set.

- (b) Thread (BK) and (Y) leads of chassis through hole on coin hopper. Connect (BK) lead to terminal 3 and (Y) lead to terminal G of coin relay.
- (c) Install totalizer and connect P2 to J2. Ensure that green connector on top of totalizer is connected to the PP position.
- (8) Position the insulation strip against the 1B rail with the boss on the strip in the 1/4-inch mounting screw hole (Fig. 7). Hold the contact springs in place with the stud extending through the hole drilled in the base, and fasten the terminal board in place on the housing base with the nut provided (Fig. 8).

Replacing Coin Box

3.06 Replace existing coin box with a modified coin box (Fig. 5).

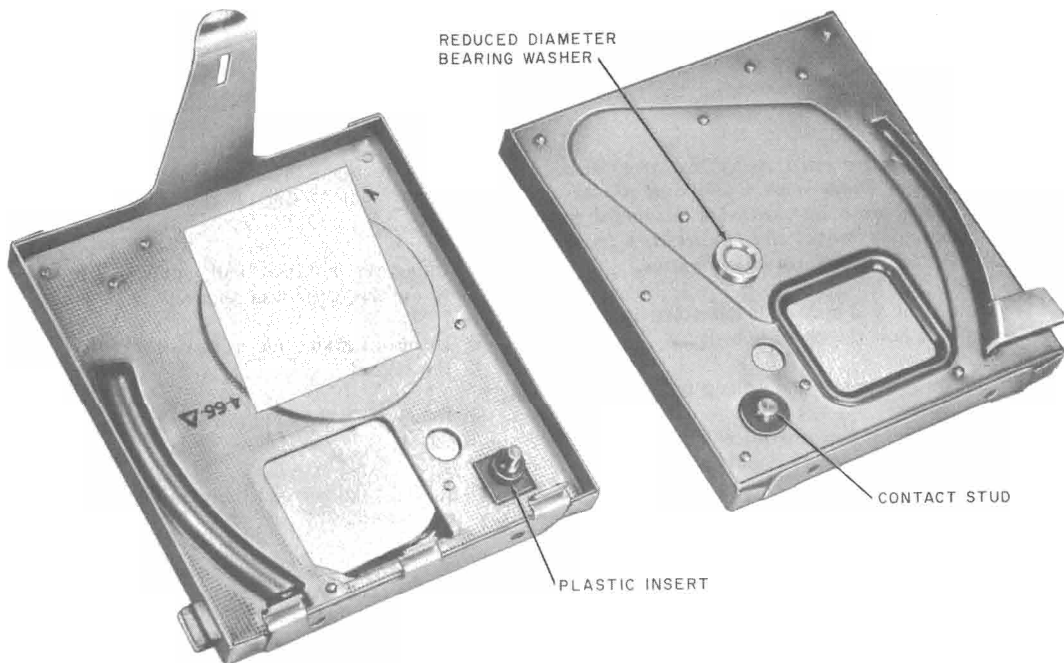


Fig. 3—IE Cover



Fig. 4—743A Drilling Template

4. CONNECTIONS

Remote Monitoring (Central Office Line Insulation Test)

4.01 Remove coin relay cover.

4.02 The lead provided with the D-180042 kit is equipped with a screw clamp to facilitate fastening to the ground tab (P-10E795) on the coin relay (Fig. 8). Care must be taken not to alter the adjustment of the coin relay by bending the spring member. Connect the spade tip of the lead to the front terminal on the terminal board.

Local Monitoring

4.03 Connect a lead from the rear terminal of the terminal board to the indicating device

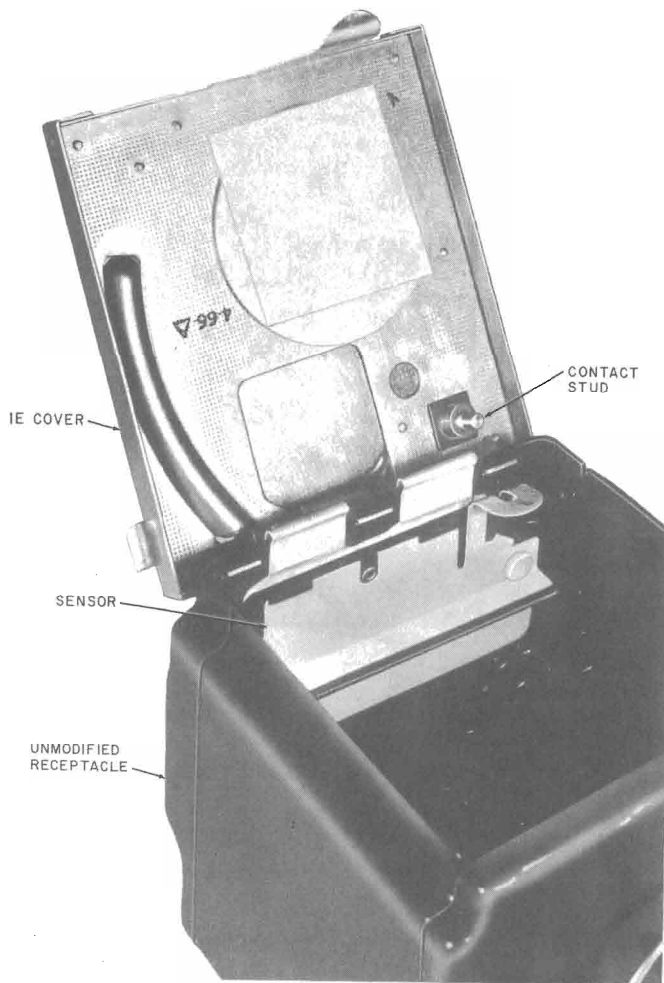


Fig. 5—Modified Coin Box

through existing cable entries in the rear of the telephone housing.

4.04 Refer to Fig. 10 for connection diagram.

4.05 Install coin relay cover and P-22F045 terminal board cover (Fig. 11).

5. OPERATION

5.01 The dual element sensor is constructed of an insulated mounting plate with two conducting surfaces. One surface is grounded through the coin receptacle cover by spring clip contacts. The other conducting surface presses against the insulated stud on the cover and carries

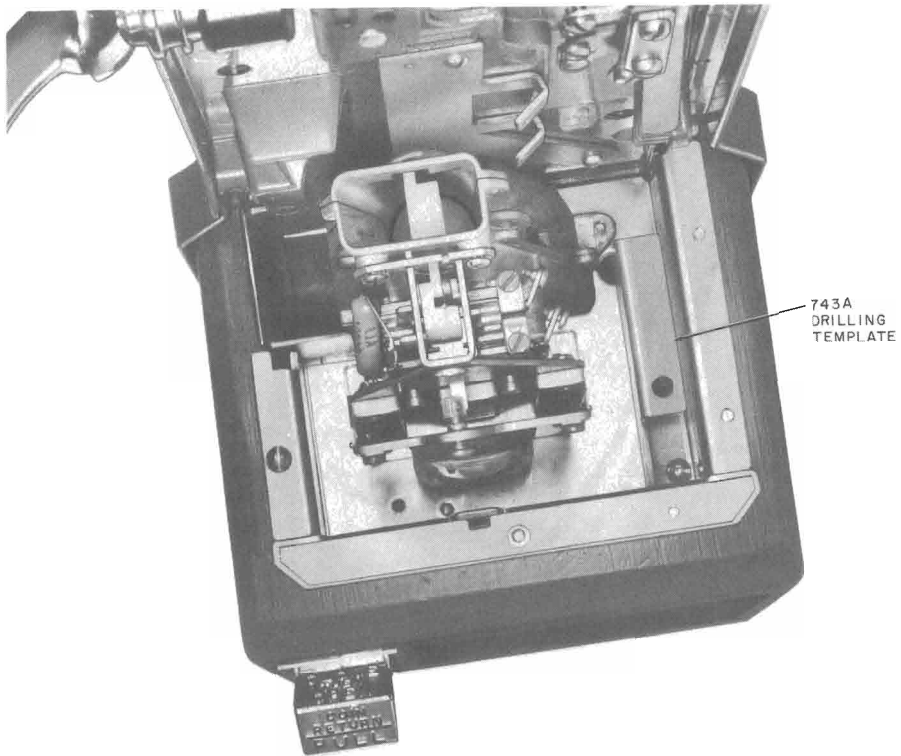


Fig. 6—Installation of Drilling Template

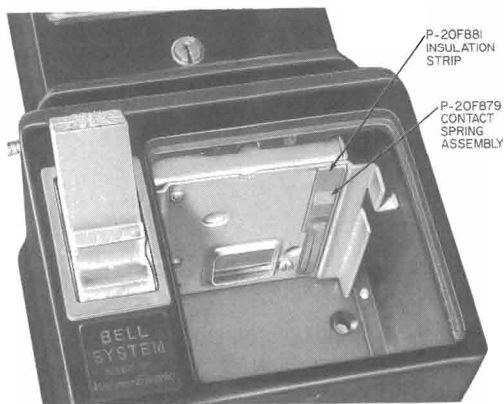


Fig. 7—Installation of Insulation Strip and Contact Spring Assembly

a coin level signal through the spring contacts (mounted on the receptacle rail) to the terminal board on the base of the set housing.

5.02 Coins accumulating in the cash box will complete a circuit between the conducting surfaces of the sensor. A ledge between the conducting surfaces protrudes into the coin box and prevents coins from leaning against the sensor and prematurely indicating the coin level accumulation. The sensor is designed and physically mounted to provide an indication to local or remote monitors when the coin level reaches approximately 70 percent of the coin box capacity.

5.03 For local monitoring, a locally supplied lead is connected to the terminal board to complete the circuit to a visual indicator. Alternately, a supplied lead and clamp assembly complete the circuit, through a 51K resistor to the coin relay,

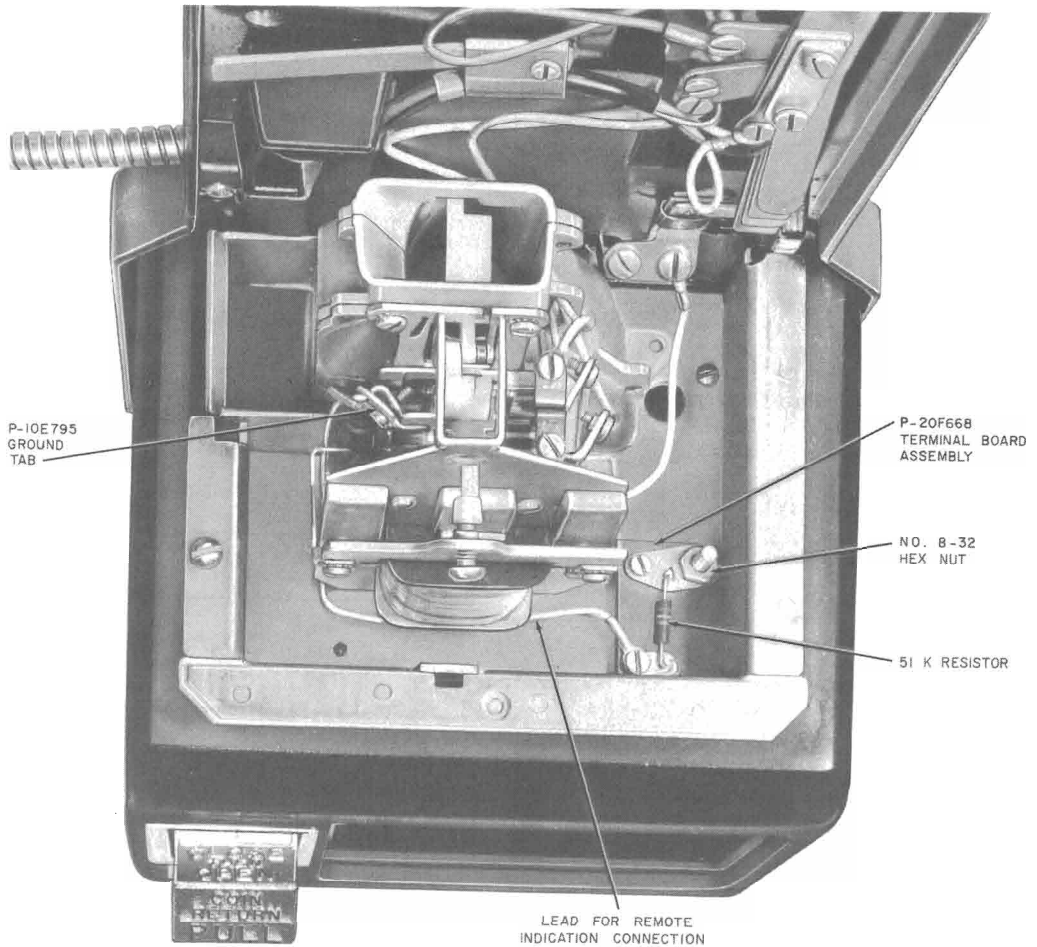


Fig. 8—Installation of Terminal Board Assembly

to permit central office monitoring of the coin level circuit with line insulation test equipment. To prevent degradation of service, the 51K resistor is shorted by the hopper trigger contacts when the telephone is in use.

6. MAINTENANCE

- 6.01** Inspect for dirty spring contacts and positive ground contact between the sensor and the

coin box cover. The insulated stud on the cover should be free of dirt and make a wiping contact with the upper plate of the sensor in the coin box. The top of the stud should make a wiping contact with the spring contact on the 1B rail when the coin box is installed in the vault.

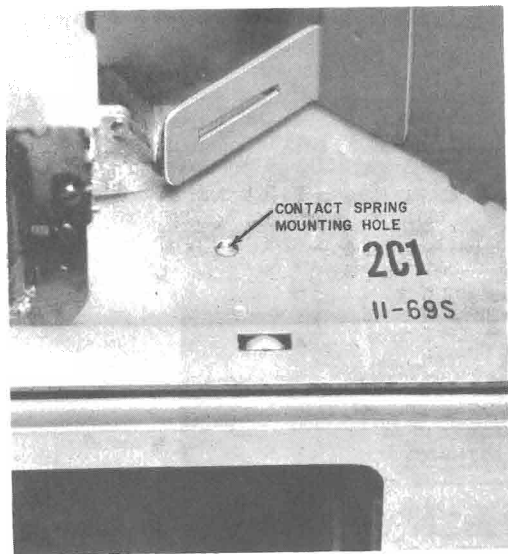


Fig. 9—Location of Contact Spring Mounting Hole in 2A/2C Telephone Sets

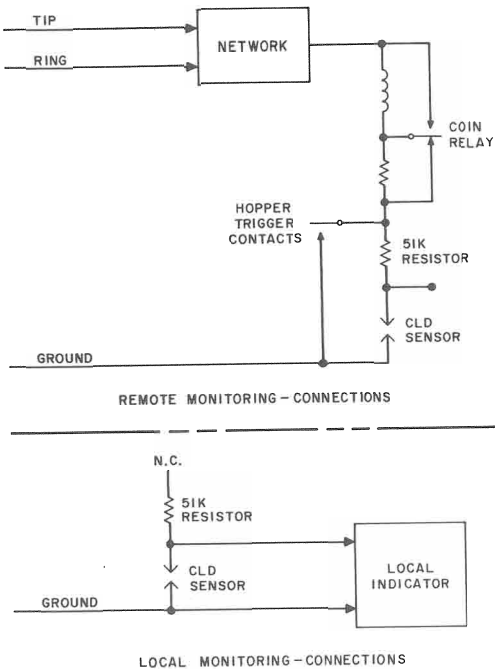


Fig. 10—Coin Level Detector—Connections

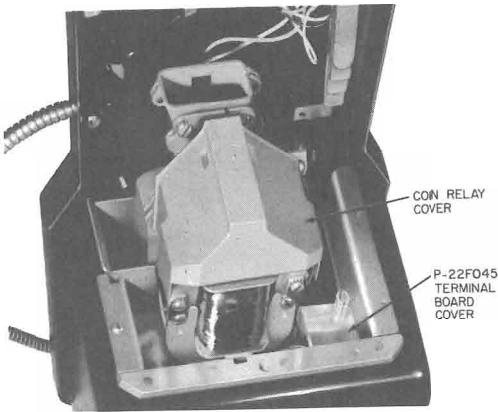


Fig. 11—Installation of Coin Relay Cover and Terminal Board Cover